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EU ENLARGEMENT TO THE EAST AND ITS IMPACT ON NON-ACCESSION COUNTRIES. GENERAL EQUILIBRIUM APPLIED ANALYSIS

Abstract

The results and consequences of the EU enlargement to the East are investigated, especially is emphasized the impact it has on trade flows of the CEE countries. The model experiments are analyzed, i. e. Computable General Equilibrium Model is employed, and the database is aggregated into 5 regions and 8 sectors of economy. Besides, the concept of the effect of technological gap between the FSU and other countries is introduced.

Key words:

foreign trade, EU enlargement, technological lag, computable general equilibrium model, export, import, tariffs, trade balance, volume of output.

1. Introduction

Foreign trade is an important factor, influencing economic development of a country or region. For CIS countries this issue is especially important due to transformations in many economic and political aspects within the CIS as well as in the whole world. First of all, these countries are still in the process of transition to the market model and the problem of creating of open economy and effective production remains quite important. Second, world globalization of economy and

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increasing role of some integrated zones of influence significantly change trade and capital flows, which in its turn will considerably influence regional development. Hence, for the CIS countries the integration of the European Union and its enlargement to the east is a very important factor.

In March 1998, the EU formally launched the process that will make enlargement possible. It embraces the following thirteen applicant countries: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovakia, Slovenia, and Turkey.

The EU can already look back on a history of successful enlargements. The Treaty of Paris (1951) establishing the European Coal and Steel Community (ECSC) and the Treaty of Rome (1957) establishing the European Economic Community (EEC) and EURATOM, were signed by six founding member nations: Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. The EU then underwent four successive enlargements. However, the enlargement facing the EU today poses a unique challenge, since it is without precedent in terms of scope and diversity: the number of candidates, the area (increase by 34%) and population (increase by 105 million). So, there is no doubt that EU enlargement will dramatically change not only landscape of new integrated Europe, but will seriously affect other regions.

In this process there is a danger that countries of the new EU will switch to the trade inside the Union and non-accession countries will face isolation, locking on the trade between themselves and lacking flows of foreign capital and new technologies which can lead to the further gap in regional development. Above all, it concerns the FSU countries and in this paper we would try to investigate this issue. For this purpose, we employ Computable General Equilibrium Model developed by Global Trade Analysis Project (USA). Database for the model is GTAP 4, in current research it was aggregated into 5 regions and 8 sectors of economy.

2. Literature review

In this section we would like to discuss some of the papers, concerning issues of trade reforms used while preparing the project.

Tarr and Matusz (1998) in their work give the overview of more then 50 papers on trade reforms and discuss major consequences of changes in trade policy, both positive and negative. Rutherford and Tarr (1998) describe the effects of liberalization in a small country, working out stylized mathematical model with two sectors of economy. Francois, McDonald and Nordstrom (1996) describe liberalization and capital flows in the framework of CGE modeling.

Martin (1995) looks at the consequences of EU enlargement using the case of Spain's economy. The paper comprises theoretical basis for the hypothesis, as well as quantitative analysis. The latter is done by GLS employing the gravitation model and represents results of partial equilibrium analysis. Be-

side that, the analysis of EU enlargement is given by such economists, as Brocker (1998) for Eastern European countries; Harrison, Rutherford and Tarr (1996) for Turkey. In both cases CGE analysis is conducted.

Goto and Hamada (1995) discuss options of trade policy choice for Asian fast-growing countries. The paper analyses economical as well as political consequences of forming separate trade block, cooperation within APEC and other options. Also, they present results of empirical analysis without description of the very model and graphical analysis.

Michalopoulus and Tarr (1997) analyze economic results of forming Customs Union within the CIS countries. They conclude that static effect will be uncertain, but in the long run members of the union will loose locking on the countries with old technology. The paper offers good discussion of the CIS countries' problems but does not give quantitative analysis.

Rob Davies (1998) analyses trade reforms in South Africa, making stress on negotiations with the EU. General equilibrium of multi-country and multi-sector model allows to simulate a number of agreements between South Africa and the European Union and gives quantitative result estimates of changes in resource allocation, trade and output.

3. Statement of the problem

As was noted above, enlargement of the EU will significantly affect many regions, but in this paper we will concentrate on the countries of former Soviet Union (FSU), which are not accessing. Although some of them expressed their wish to join the EU, unstable political situation and economic turmoil does not allow these countries to meet members criteria and their accession is postponed at least by one decade.

Enlargement of the EU may have negative effect for the FSU countries coming from two sides: 1) trade diversion among members of the new EU and 2) technological gap, as the FSU countries might be left behind technological flows.

In order to capture these effects, we designed two model experiments: the first one simulates gradual integration of CEEC into the EU according to the enlargement schedule. The European Union at first unilaterally reduces its tariffs on non-food products coming from CEECs, which is followed by reciprocal measure from CEEC, than the food sector is liberalized. In the second model experiment, we add technology factor and simulate technological gap between the FSU and other economies.

The model is Computable General Equilibrium model by Global Trade Analysis Project (GTAP). The data in the model is taken from GTAP 4 database and aggregated into 5 regions and 8 sectors of economy.

Before turning to the simulation itself, it is important to know what limitations the model has:

First of all, the data has a high level of aggregation. This especially matters for the FSU region, which includes western FSU countries that are close to the EU and have intensive trade with it, as well as Asian countries, with weaker trade connections.

Second, the model reflects actual procedure of enlargement somewhat schematically, without exact correspondence to the time schedule of enlargement.

Third, the model assumes perfect competition and constant returns to scale that is a strong assumption, although the first one can be valid, since we concentrate on international trade, which is quite competitive.

Fourth, due to the fact that the model is static and not dynamic, it does not fully capture the effect of intertemporal growth and technological improvement. Nevertheless, it gives estimation to substantiate the growth, while technological aspect is partly modeled through shocking change in output technology.

Although the model has some limitations and does not provide deep insight into country-specific results, it gives fairly good estimation of the effects of EU enlargement on non-accession countries of the FSU in terms of block-wide perspective.

4. Outline of the simulation

The outline of the model experiment is described in more details below:

Regions: FSU, EU, CEEC, NAFTA, ROW.

Sectors of industry: food, mineral, other primary industry, light industry, metal, minimal processed, manufactures, services.

Model experiment 1: Enlargement of the EU.

Step 1. Unilateral removal of tariffs on non-food products from CEEC by the EU.

Step2. Reciprocal removal of tariffs on non-food products by CEEC.

Removal of internal tariffs on non-food products inside CEEC.

Common outside tariffs on non-food products in the EU and CEEC.

Step 3. Unilateral removal of tariffs on food products from CEEC by the EU.

Step 4. Reciprocal removal of tariffs on food products by CEEC.

Removal of internal tariffs on food products inside CEEC.

Common outside tariffs on food products in the EU and CEEC.

Model experiment 2. Enlargement of the EU and technological change.

In this model experiment additionally to the complete procedure of model experiment 1 we add effect of technological change differentiated by regions.

The EU, CEEC and NAFTA countries all enjoy technological improvement of 5%, ROW+ grow by 3%, while FSU remains at the same technological level.

5. Results of the simulations

In this section we would like to analyse the results of the simulation, beginning with protection structure and then proceeding with analysis of quantitative estimates of model experiments 1 and 2, going step by step in line with accession schedule.

5.1. Initial protection structure

Let's start with reviewing initial protection structure of three regions of our interest: FSU, the EU and CEEC.

As can be seen from Table 1, on average, FSU countries have higher import tariffs than other countries. But it should be taken into account that higher tariffs are imposed on such goods as mineral products, in primary and metal industries where FSU block has large domestic production and traditionally is a net exporter. At the same time food industry is protected significantly less then in CEEC and the EU.

At the initial stage, countries of FSU face higher import tariffs in CEEC's than in the European Union, with exception of primary products (25.4% vs. 8%) and light industry (8% vs. 7%). If in the result of enlargement CEEC accept external tariffs of the EU (which is quite possible and I follow this assumption in the work), FSU will not be harmed at least by higher tariffs.

Examining the bilateral trade of the EU and CEEC, we can notice again that eastern countries have higher tariffs, except of food industry. Besides that, CEEC's have considerable initial intra-region import tariffs (approximately at the 6% average level) which have to be eliminated in the process of accession to the EU that can bring additional benefits to those countries.

5.2. Model experiment 1. Enlargement of the EU

The first step concerns unilateral elimination of tariffs on non-food products from CEEC by the European Union. Table 2 shows changes in output in different regions. CEEC rapidly increases its production in light industry by 11% with accompanying decline in other industries. The output in the EU insignificantly declines, while in the FSU it increases by 0.4%. Exports from the FSU rise by 30%, here the only source of external demand is the CEEC region. Exports to CEEC of light industry and primary product increase by more then 11% each and we can suggest that they are used as intermediate inputs for CEEC produc-

tion. At the same time, imports drop by 46% and again, the main effect is coming from decrease of CEEC imports, at the first place of primary products, in light industry, metal and manufactures. Prices in the FSU do not change significantly rising by 0.79%.

Examining the welfare effect of the reforms we see that the FSU is among the losers, with an equivalent of $138 m decline in welfare (it is worth to note that the EU also experiences significant welfare losses at the initial stage of enlargement). Two-thirds of losses in the FSU are caused by the trade effect (USD 83 m), especially in the food industry and manufactures (USD 22 m and USD 32 m respectively). Losses due to allocation of resources amount to USD 48 m, again with food and manufacturing industries as leaders.

Summing up, we see that as the enlargement commences, the FSU somewhat increases its output and runs into surplus of the trade balance due to the export of intermediate inputs for CEEC; but the FSU experiences welfare losses, mainly caused by TOT effect.

After the second step when CEEC reduces its tariffs on non-food goods from the EU, the overall output does not increase as much as at the first stage. CEEC increased output by 6.27%, in the EU and FSU decreased by 0.1% and 0.07% respectively. In the FSU the output of light industry decreased the most – by 0.57%. In contradiction to the first case, now the FSU has decrease in both exports and imports. Export decreased the most in light industry and manufactures and can be explained by continuing trade diversion in the new EU contries. Welfare losses in the FSU now doubled more than twice: USD 288 m, USD 252 m of which are due to TOT effect (Table 9).

At the third stage, output in the FSU increases by 0.21%, in the EU by 0.22%, while output in CEEC decreases by 1.64% (Table 10). The most substantial increase in the FSU output occurred in food industry and primary products. Exports of the FSU decreased by 24% and imports by 60%. Exports of food to CEEC increased by 12%. Welfare losses continue to increase: now the FSU loses USD 369 m, again the most part of losses are caused by TOT (USD 302 m).

After complete liberalization of trade between the EU and CEEC, the FSU output practically does not change (just 0.1% increase). It should be noted that the negative structure in the output changes: the highest growth is in low-processed metal industry and primary goods, while food and light industry experience decline in their production. Foreign trade drops to the same level both in export and import – 50% decline. Welfare losses are somewhat less than in previous case – USD 358 m (Table 17). TOT effect brought about USD 306 m in losses, allocation – USD 82 m, while changes in prices of savings and investments had positive effect equivalent to USD 30 m.

5.3. Model experiment 2. Enlargement of the EU and technological change

According to the theory, the negative effect of EU enlargement for non-accession FSU countries is caused not only by changes in trade patterns, but by the technological gap that might emerge between East and West. In this section, additionally to the previous simulations, we try to proxy effect of technology.

Table 18 shows the changes in output: output in the FSU rises but by relatively lowerer level than in other regions: 5.42% increase comparing with almost 50% increase in CEEC and 26% in the EU. Output in light and metal industry and in primary goods rises the most in the FSU, on average by 7%. Decomposing output changes into domestic and export parts (Table 22) we see that 80% of overall output increase is due to external side, while in metal industry and primary goods production this is almost the only source.

From the Table 23 we see that the EU and CEEC decreased their exports to all regions, except mutual exports. At the same time, imports of the EU and CEEC significantly increased. Non surprisingly, FSU exports grow dramatically by 570%, the most part of which goes to the new EU. Imports decline by 126% and again, due to the trade with the EU. This leads to the increase in the trade surplus by USD 4765 m.

But the trade surplus unfortunately does not lead to the welfare gains in the FSU. Actually, regional household income in the FSU decreases by 13%, while per capita utility by 1.04% (Tables 24 and 25).

The ratio of trade balance to income is 0.82 (the biggest among all regions) and stresses the fact that although the FSU intensifies its foreign trade, their production is not efficient and does not bring proper income increase.

Considering the welfare, we see that due to EU enlargement with emergence of technological gap the FSU lost considerable amount of USD 4617 m. Losses of USD 4754 m are brought about by TOT effect, allocation effect caused losses of USD 751 m, while investment-savings price effect had positive gain of USD 887 m. Decomposing effects of allocation and terms of trade by sectors in economy we see that the most negative impact was on manufactures, food industry and services. As was noted before, production of metal and primary goods in the FSU increased and allocation effect for those sectors was actually positive, but terms of trade became significantly negative outweighting positive allocation effect.

6. Summary

Below we would like to summarize the main findings of the paper:

The FSU increased its production by 5.5%. The negative point here is that production in low-processed industries (metal and primary goods) increased the most, while production of products with higher technological input declined, which in the long run may have strong negative effect on the FSU development.

The trade balance experiences significant surplus increase of USD 4765 m. The main importers of FSU goods are CEEC and the EU which use them as intermediate inputs for their growing production.

Although the trade balance is in surplus, the ratio of trade balance to income is 0.88, rather higher and is accounted for ineffectiveness of foreign trade.

Imports of the FSU decline first of all for consumer commodities: services, food and manufactures that might have its own negative impact on household utilities.

Taking into account that the FSU countries will very likely remain isolated from technological innovations and «know-how», we introduce the effect of technological gap between the FSU and other countries which actually brings about the most serious negative effect on the FSU, welfare losses become dramatically larger than just from changing trade patterns.

In general, the EU enlargement to the east has negative effect on non-accession countries of the former Soviet Union and their welfare losses come to the equivalent of USD 4617 m. Income declines by 13%, while per capita utility by 1.04%.

The main message for the policymakers in non-accession countries of the former Soviet Union is to be aware of danger of being behind beneficial technological and trade flows and we stress the importance of negotiation with the EU to reach closer cooperation. Taking into account that FSU countries will not be able to meet accession criteria for a pretty long term, the most efficient strategy for them is to gain free access to foreign markets (first of all through the WTO membership) and this should be the pressing agenda for FSU policymakers.

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Appendixes

Table 1.

Import tariffs by commodity in various regions, %

FSU					
Industry	FSU	EU	NAFTA	CEEC	ROW
Food	8.5	11.4	9.0	13.1	5.8
Mineral	5.2	18.2	10.9	5.0	17.8
Other Primary	12.3	6.6	8.4	8.0	2.4
Light	14.8	14.3	14.7	18.0	18.1
Metal	12.9	12.2	22.5	15.4	16.4
Mineral Pr.	9.5	9.6	10.6	12.8	11.6
Manufactures	10.5	8.9	10.6	13.4	14.6
Services	2.5	1.8	1.8	1.3	1.7

CEEC					
Industry	FSU	EU	NAFTA	CEEC	ROW
Food	26.3	20.9	23.3	13.0	16.7
Mineral	1.2	2.1	1.4	2.5	6.2
Other Primary	8.0	4.7	3.4	3.5	2.9
Light	7.0	8.8	6.3	9.3	7.5
Metal	4.9	5.8	3.3	4.7	7.2
Mineral Pr	9.2	7.7	8.5	7.2	7.9
Manufactures	8.6	6.9	8.4	7.5	11.3
Services	0.0	0.0	0.0	0.0	0.0

EU				
Industry	FSU	NAFTA	CEEC	ROW
Food	12.3	18.0	24.2	18.3
Mineral	0.0	0.1	0.0	0.1
Other Primary	25.4	32.8	4.4	14.3
Light	8.0	7.3	7.6	8.7
Metal	2.1	2.7	3.5	3.3
Mineral Pr	3.6	3.7	3.4	4.2
Manufactures	2.9	3.3	3.7	4.6
Services	0.0	0.0	0.0	0.0

Model experiment 1.

Step 1.

Table 2.
Changes in output, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	–0.07	0.65	–0.09	–1.04	–0.09	–0.64
Mineral	0.04	0.01	0.03	–1.15	0.05	–1.02
OthPrimary	0.35	0.11	0	1.05	–0.01	1.51
Light	–0.06	–1.02	–0.04	11.07	–0.2	9.74
Metal	0.02	–0.09	0.03	–0.82	0.1	–0.76
MinPr	0.04	–0.01	0.01	–0.27	0.02	–0.2
Mnfcs	0.08	–0.06	0	–0.58	0.06	–0.51
Total	0.4	–0.4	–0.07	8.26	–0.06	8.12

Table 3.
Changes in FSU exports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.4	–5.4	–0.5	5.3	–0.6	–0.9
Mineral	0.7	–0.4	–0.5	0.8	–0.5	0.2
OthPrimary	0.3	–1.9	–1.0	11.4	–1.0	7.8
Light	1.1	–4.4	–0.8	11.2	–1.0	6.1
Metal	0.7	–0.6	–0.4	4.9	–0.3	4.4
MinPr	0.6	–0.4	–0.4	4.0	–0.4	3.4
Mnfcs	0.5	–0.6	–0.6	5.3	–0.6	4.1
Svces	0.0	0.0	–0.2	5.5	–0.1	5.2
Total	4.2	–13.6	–4.3	48.5	–4.5	30.2

Table 4.
Changes in FSU imports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.4	1.2	0.9	–9.1	1.0	–5.6
Mineral	0.7	1.1	1.2	–4.2	1.2	–0.1
OthPrimary	0.3	0.7	1.2	–12.2	1.4	–8.7
Light	1.1	2.5	2.0	–12.6	2.2	–4.8
Metal	0.7	0.9	1.2	–10.1	1.3	–6.1
MinPr	0.6	0.8	1.0	–6.7	1.1	–3.3
Mnfcs	0.5	0.8	1.1	–12.8	1.3	–9.1
Svces	0.0	0.1	0.3	–9.5	0.4	–8.6
Total	4.2	8.1	8.9	–77.3	9.8	–46.3

Table 5.
Welfare decomposition

	Allocation	TOT	IS F	Total
FSU	–48.6	–82.9	–7.0	–138.6
EU	–969.8	–1717.2	–15.7	–2702.7
NAFTA	12.7	–205.3	–90.1	–282.7
CEEC	638.4	3173.7	160.5	3972.6
ROW	–568.0	–1203.8	–49.5	–1821.3
Total	–935.3	–35.6	–1.9	–972.8

Step 2.

Table 6.
Changes in output, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.08	0.53	–0.08	–0.98	–0.07	–0.52
Mineral	0.02	–0.08	0.02	–1.03	0.05	–1.01
OthPrimary	0.40	0.16	–0.03	0.79	–0.02	1.30
Light	–0.57	–0.70	–0.11	12.37	–0.37	10.61
Metal	0.03	–0.09	0.02	–0.78	0.11	–0.71
MinPr	–0.03	0.12	0.01	–2.07	0.03	–1.94
Mnfcs	–0.01	–0.03	0.00	–2.02	0.10	–1.97
Total	–0.07	–0.10	–0.17	6.27	–0.18	5.76

Table 7.
Changes in FSU exports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.8	–4.3	0.2	4.8	0.0	1.5
Mineral	0.5	0.8	0.6	–1.2	0.5	1.2
OthPrimary	0.0	–1.0	–0.4	8.4	–0.5	6.5
Light	0.7	–3.5	0.3	–17.9	0.1	–20.3
Metal	1.0	0.9	0.6	–9.3	0.6	–6.3
MinPr	0.6	0.8	0.3	–10.5	0.3	–8.5
Mnfcs	1.1	1.3	0.5	–18.5	0.6	–15.1
Svces	0.6	1.3	0.6	5.4	0.6	8.4
Total	5.2	–3.8	2.8	–38.8	2.1	–32.5

Table 8.
Changes in FSU imports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.8	0.2	0.6	–7.2	0.9	–4.7
Mineral	0.5	–0.5	–0.1	–2.3	0.0	–2.3
OthPrimary	0.0	–1.2	0.3	–10.7	0.5	–11.1
Light	0.7	–0.1	0.3	–4.1	0.6	–2.6
Metal	1.0	–0.7	0.5	–4.9	0.7	–3.5
MinPr	0.6	–0.5	0.3	–3.2	0.5	–2.2
Mnfcs	1.1	–0.9	0.6	–5.5	0.8	–3.9
Svces	0.6	–0.8	0.2	–7.8	0.3	–7.6
Total	5.2	–4.4	2.7	–45.6	4.3	–37.8

Table 9.
Welfare decomposition

	Allocation	TOT	IS F	Total
FSU	–63.9	–252.0	27.9	–288.0
EU	–277.3	926.3	–48.8	600.3
NAFTA	–18.0	–406.1	–85.3	–509.5
CEEC	346.6	1690.9	44.7	2082.3
ROW	–778.6	–1969.9	61.2	–2687.4
Total	–791.3	–10.8	–0.2	–802.3

Step 3.

Table 10.
Changes in output, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	0.16	–0.01	–0.11	3.45	–0.11	3.38
Mineral	0.00	–0.06	0.02	–1.71	0.05	–1.70
OthPrimary	0.45	0.27	–0.02	–0.86	0.00	–0.15
Light	–0.43	–0.28	–0.09	8.48	–0.31	7.37
Metal	0.04	0.04	0.03	–3.31	0.13	–3.06
MinPr	–0.01	0.18	0.01	–2.91	0.03	–2.70
Mnfcs	0.00	0.08	0.00	–4.78	0.09	–4.60
Total	0.21	0.22	–0.15	–1.64	–0.11	–1.47

Table 11.
Changes in FSU exports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	1.3	–7.0	–0.2	12.6	–0.3	6.4
Mineral	0.6	1.0	0.7	–1.8	0.6	1.1
OthPrimary	0.2	–0.8	–0.6	8.9	–0.8	7.0
Light	1.2	–3.3	0.0	–17.6	–0.2	–19.8
Metal	1.2	0.9	0.5	–9.1	0.5	–6.0
MinPr	0.8	0.7	0.3	–9.7	0.2	–7.7
Mnfcs	1.2	1.1	0.3	–17.6	0.4	–14.6
Svces	0.5	1.1	0.5	7.2	0.5	9.9
Total	7.1	–6.4	1.6	–27.0	1.0	–23.8

Table 12.
Changes in FSU imports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	1.3	1.6	1.4	–15.8	1.6	–10.0
Mineral	0.6	–0.4	0.0	–3.1	0.0	–2.8
OthPrimary	0.2	–0.6	0.7	–15.5	1.0	–14.1
Light	1.2	0.9	1.2	–9.3	1.5	–4.5
Metal	1.2	–0.2	0.8	–8.8	1.0	–6.0
MinPr	0.8	–0.1	0.6	–5.8	0.8	–3.6
Mnfcs	1.2	–0.4	0.9	–10.5	1.1	–7.7
Svces	0.5	–0.6	0.2	–11.4	0.4	–10.9
Total	7.1	0.1	5.8	–80.1	7.4	–59.7

Table 13.
Welfare decomposition

	Allocation	TOT	IS F	Total
FSU	–89.6	–302.4	23.0	–369.0
EU	226.3	–415.0	–48.9	–237.6
NAFTA	–11.0	–418.6	–114.9	–544.5
CEEC	–197.8	3228.8	125.3	3156.3
ROW	–866.1	–2128.6	14.0	–2980.7
Total	–938.2	–35.8	–1.5	–975.4

Step 4.

Table 14.
Changes in output, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	–0.2	0.5	–0.2	1.6	–0.2	1.6
Mineral	0.0	–0.1	0.0	–1.4	0.1	–1.4
OthPrimary	0.6	0.2	0.0	–0.1	0.0	0.6
Light	–0.4	–0.6	–0.1	10.4	–0.3	9.0
Metal	0.2	–0.1	0.0	–2.2	0.2	–2.0
MinPr	0.0	0.1	0.0	–2.5	0.0	–2.4
Mnfcs	0.0	0.0	0.0	–3.6	0.1	–3.4
Total	0.1	0.1	–0.2	2.1	–0.1	2.0

Table 15.
Changes in FSU exports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	1.0	–6.3	0.3	–18.9	0.1	–23.9
Mineral	0.6	0.9	0.7	–1.5	0.6	1.3
OthPrimary	0.2	–0.7	–0.3	8.9	–0.5	7.6
Light	1.1	–3.2	0.3	–17.5	0.1	–19.1
Metal	1.3	1.1	0.7	–8.9	0.7	–5.1
MinPr	0.8	0.9	0.4	–10.0	0.3	–7.5
Mnfcs	1.4	1.5	0.6	–17.7	0.7	–13.6
Svces	0.6	1.4	0.7	6.5	0.7	10.0
Total	7.0	–4.4	3.3	–59.1	2.6	–50.4

Table 16.
Changes in FSU imports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	1.0	0.4	0.6	–10.2	0.9	–7.2
Mineral	0.6	–0.4	0.0	–2.6	0.1	–2.4
OthPrimary	0.2	–1.1	0.4	–13.4	0.7	–13.1
Light	1.1	0.2	0.7	–6.7	1.1	–3.6
Metal	1.3	–0.6	0.7	–7.2	1.0	–4.8
MinPr	0.8	–0.4	0.5	–4.6	0.7	–3.0
Mnfcs	1.4	–0.8	0.8	–8.4	1.0	–6.1
Svces	0.6	–0.9	0.2	–9.9	0.4	–9.6
Total	7.0	–3.6	3.9	–63.0	5.8	–49.8

Table 17.
Welfare decomposition

	Allocation	TOT	IS F	Total
FSU	–82.4	–306.9	31.0	–358.3
EU	–652.8	540.3	–59.0	–171.5
NAFTA	–2.5	–467.1	–108.2	–577.8
CEEC	–90.0	2493.6	85.9	2489.5
ROW	–947.3	–2280.2	49.7	–3177.8
Total	–1775.0	–20.3	–0.6	–1795.9

Model experiment 2

Table 18.
Changes in output, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	2.77	1.41	1.74	4.45	2.27	12.65
Mineral	–0.22	–1.49	–0.51	–1.43	–0.93	–4.57
OthPrimary	6.39	–2.13	0.82	2.13	1.65	8.87
Light	7.54	0.95	6.44	18.94	7.44	41.31
Metal	8.51	–1.45	–0.96	–1.65	0.57	5.03
MinPr	2.32	0.74	3.73	0.86	2.28	9.93
Mnfcs	–1.19	1.78	4.12	1.64	4.24	10.59
Svces	–1.03	6.61	5.75	5.9	3.14	20.37
CGDS	–19.68	19.38	6.69	18.28	–0.95	23.72
Total	5.42	25.82	27.83	49.13	19.71	127.9

Table 19.
Changes in FSU exports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	10.2	12.0	9.0	–0.8	10.1	40.5
Mineral	1.6	–6.0	–7.6	–2.5	–7.9	–22.5
OthPrimary	7.1	8.9	–3.3	24.1	6.1	42.9
Light	16.4	33.5	21.3	14.6	14.5	100.3
Metal	13.9	25.4	12.8	10.5	10.9	73.4
MinPr	8.7	18.8	10.6	6.0	7.7	51.8
Mnfcs	11.4	47.1	26.2	18.1	18.7	121.5
Svces	14.3	40.4	33.1	47.8	24.5	160.0
Total	83.5	180.1	102.1	117.7	84.6	568.0

Table 20.
Changes in FSU imports, %

	FSU	EU	NAFTA	CEEC	ROW	Total
Food	10.2	–9.1	3.8	–20.0	1.7	–13.3
Mineral	1.6	7.6	9.5	–6.4	9.5	21.8
OthPrimary	7.1	–15.5	11.0	–26.4	1.0	–22.8
Light	16.4	–16.8	2.0	–16.6	9.4	–5.6
Metal	13.9	–13.6	–1.1	–14.9	4.3	–11.3
MinPr	8.7	–10.0	2.2	–10.5	4.2	–5.4
Mnfcs	11.4	–23.6	–9.8	–26.0	–1.2	–49.2
Svces	14.3	–17.9	–9.3	–25.4	–2.3	–40.5
Total	83.5	–98.9	8.4	–146.1	26.7	–126.4

Table 21.
Welfare decomposition

	Allocation	Technologi-cal	TOT	IS F	Total
FSU	–751.0	0.0	–4754.0	887.2	–4617.7
EU	49831.8	927614.9	27788.1	–1031.3	1004203.5
NAFTA	38616.9	747142.6	2892.5	–3706.1	784946.0
CEEC	855.4	52577.1	3876.2	–118.2	57190.6
ROW	21519.6	691510.3	–30582.1	4062.2	686510.0
Total	110072.8	2418844.9	–779.2	93.9	2528232.4

Table 22.
Decomposition of output in FSU

	Food	Mineral	OthPri-mary	Light	Metal	MinPr	Mnfcs	Total
SHRDM	2.02	0.93	0.62	3.68	0.83	0.92	–3.34	5.67
SHRXMD	0.75	–1.15	5.77	3.86	7.68	1.40	2.15	20.46
Total	2.77	–0.22	6.39	7.54	8.51	2.32	–1.19	26.13

Table 23.
Total exports

	FSU	EU	NAFTA	CEEC	ROW	Total
FSU	384.5	7549.2	1357.6	574.1	3692.5	13557.8
EU	–7410.7	11925.5	–20162.9	27828.1	–67474.1	–55294.1
NAFTA	–455.9	31129.1	10774.6	377.3	–4889.2	36935.8
CEEC	–1491.5	23649.3	–1024.1	–2482.4	–5381.9	13269.4
ROW	181.0	82248.7	46142.7	1619.2	43789.3	173980.8
Total	–8792.7	156501.7	37087.8	27916.3	–30263.4	182449.8

Table 24.
Regional household income

FSU	–13.06
EU	6.3
NAFTA	1.67
CEEC	7.83
ROW	–3.31

Table 25.
Per capita utility

FSU	–1.04
EU	13.18
NAFTA	10.78
CEEC	14.05
ROW	7.34

Table 26.
Ratio of trade balance to income

FSU	0.82
EU	0
NAFTA	0.02
CEEC	0.19
ROW	0.06